

# **DTSC Laboratory Update**

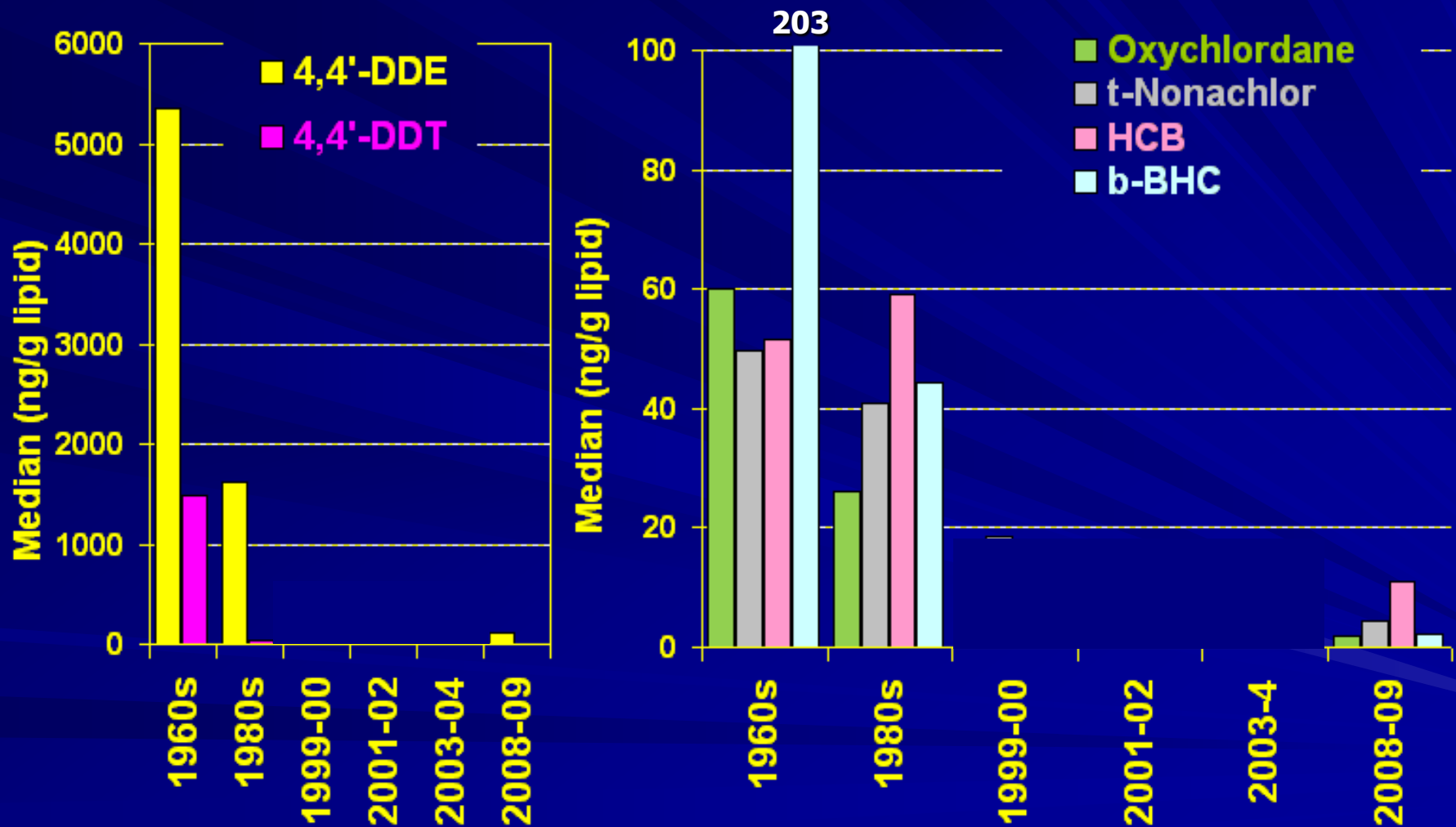
**Bruce LaBelle, June-Soo Park, Myrto Petreas  
Environmental Chemistry Laboratory DTSC**

**Report to Scientific Guidance Panel  
Sacramento  
November 2, 2010**

# Validated Methods

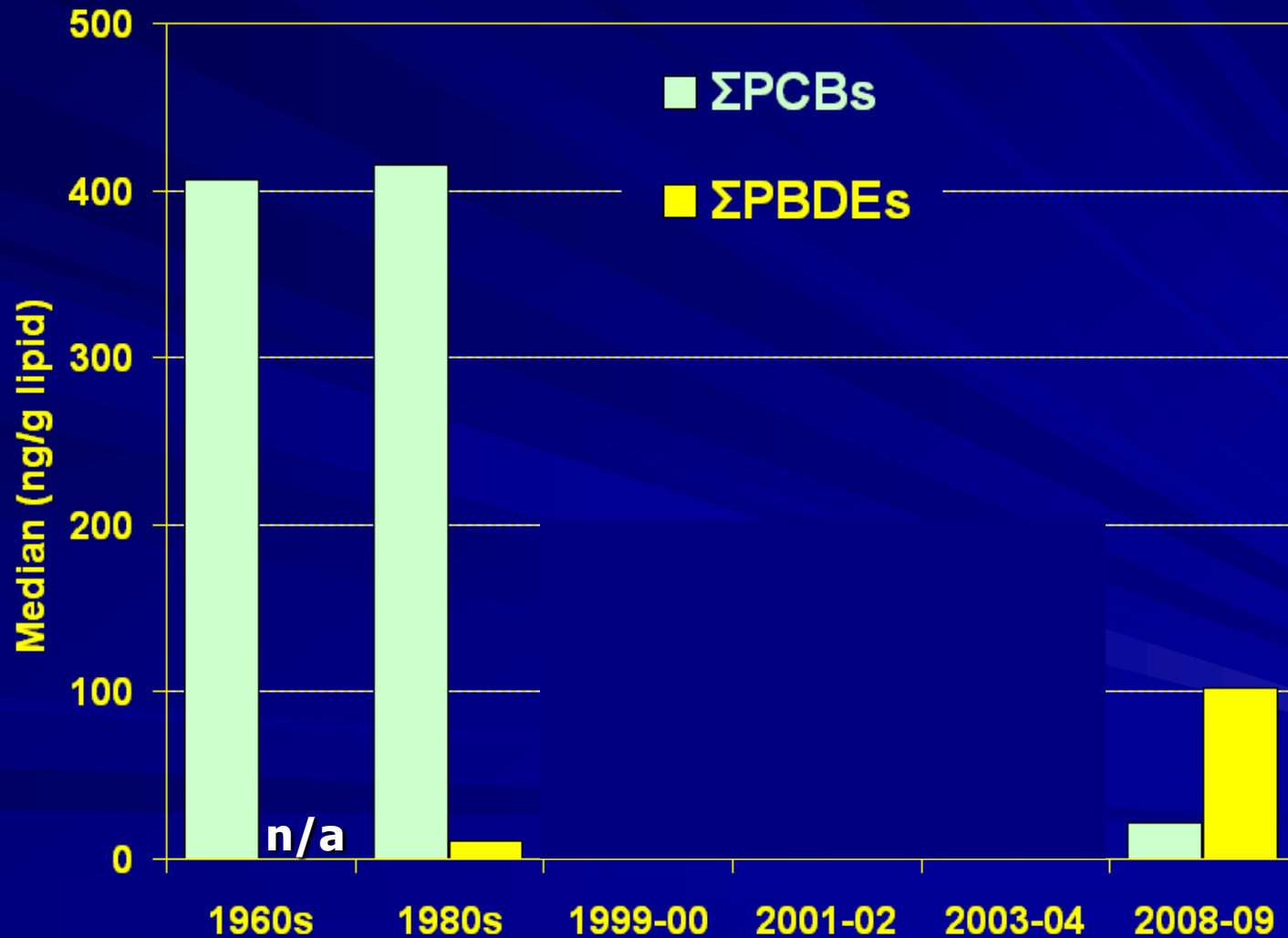
- **Polybrominated Diphenyl Ethers (PBDEs)**
- **Perfluorinated Chemicals (PFCs)**
- **Polychlorinated Biphenyls (PCBs)**
- **Organochlorine Pesticides (DDT, DDE, HCB, HCH, Chlordane metabolites)**
- **Phenolic Compounds (e.g, OH-PCBs, OH-PBDEs, triclosan, pentachlorophenol)**

# Cl-Pesticides ↓ in CA Women

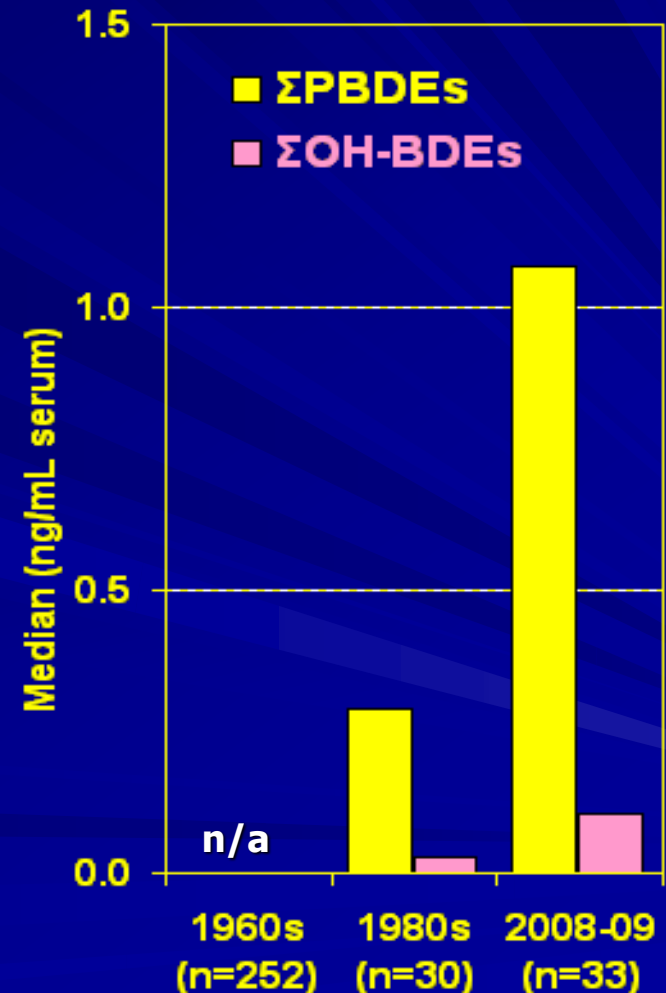
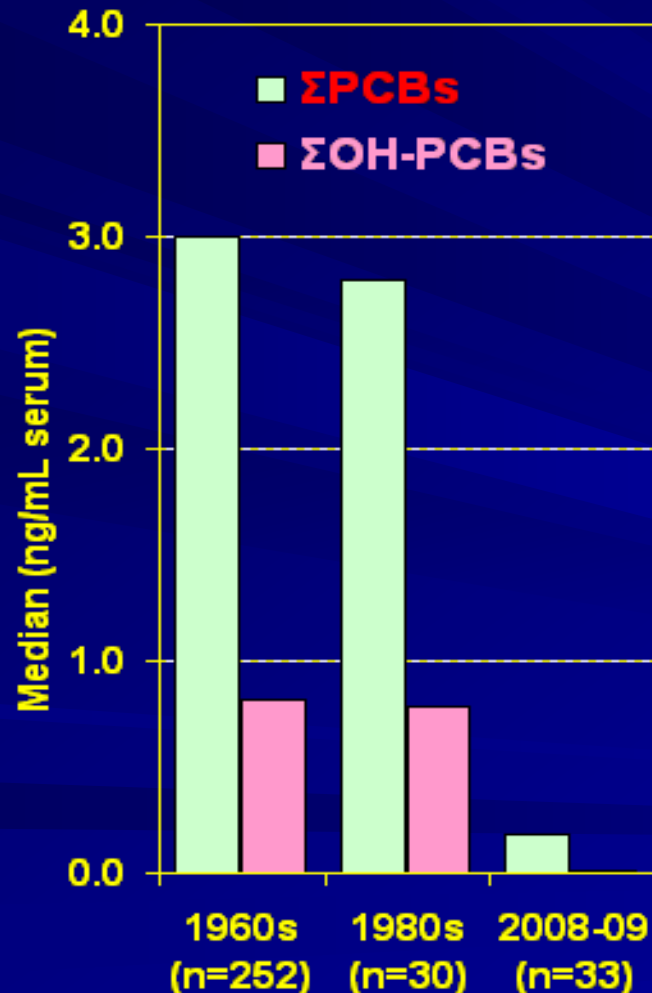


1960s (n=495); 1980s (n=30); 2008-09 (n=33)

# PCBs ↓ PBDEs ↑ in CA Women



# PCB/PBDE OH-Metabolites Are Potent Thyroid Endocrine Disruptors



# PFC Analysis

**-On-line automated SPE (Symbiosis) coupled with LC-MSMS (ABSciex 4000 Qtrap)**

**-QAQC:**

**Laboratory/Instrument Blanks ✓**

**MS control samples ✓**

**NIST SRM ✓**

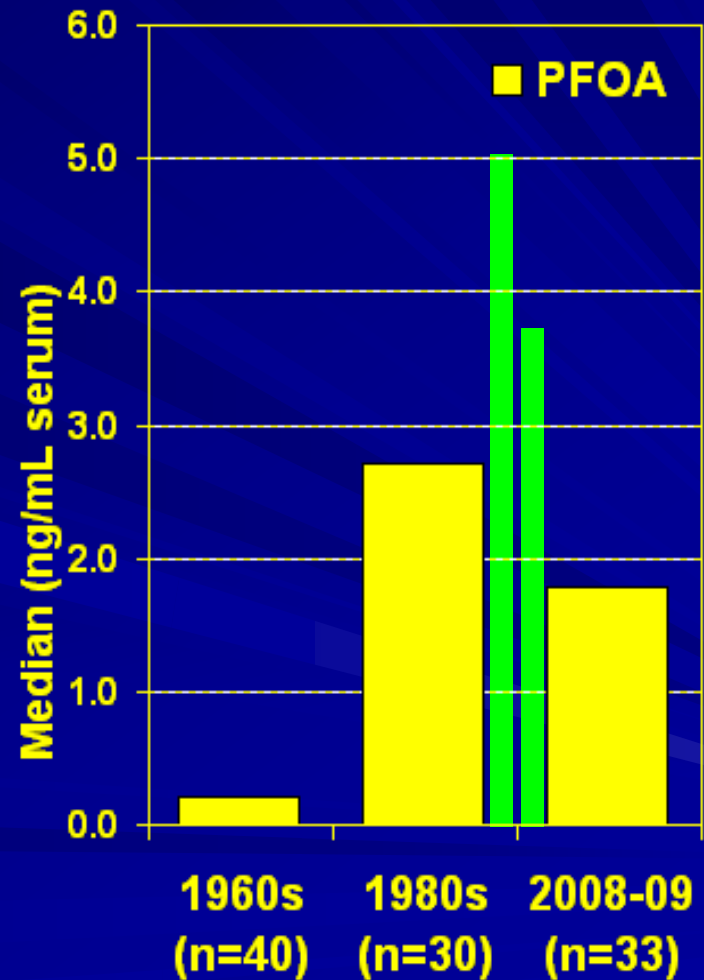
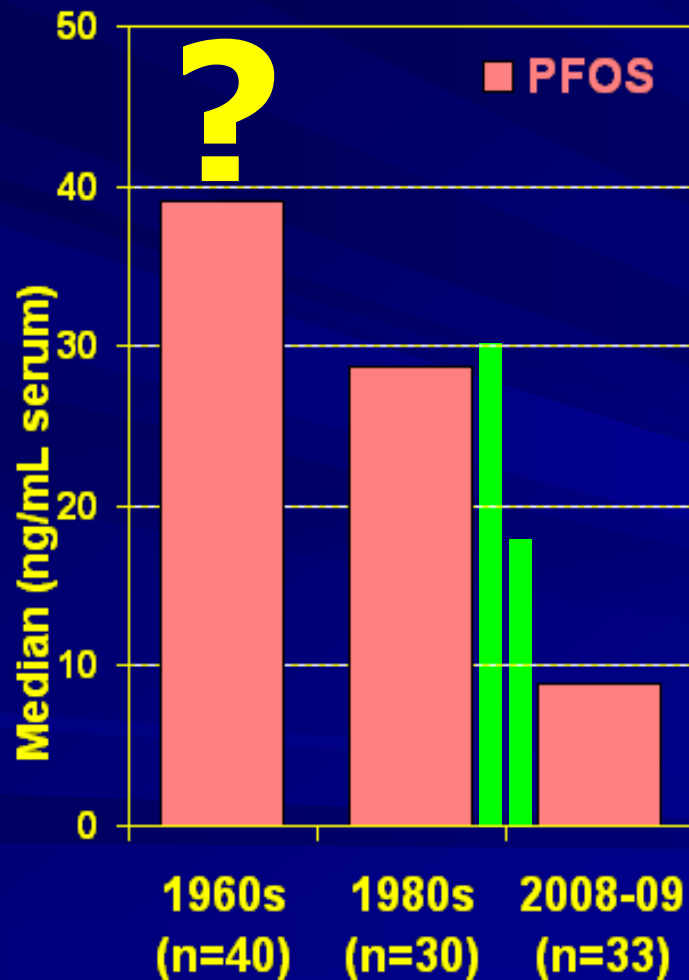
**Inter-lab comparisons**

**CDC ✓**

**NYSL ✓**

**MNSL ✓**

# PFCs in California Women



Green bar: NHANES (1999-00) and (2003-04)

# **CDC Cooperative Agreement**

## **■ Personnel:**

- Dr. Suhash Harwani**
- Dr. Tan Guo**
- Third Candidate in Process**

## **■ Collaboration with CDPH on QA/QC, Sample Management, LIMS**

## **■ Equipment: LC-MSMS**



# New/Alternative BFRs: Soon to come...

GC-MS Method		Detect in Human Serum?	Further method Validation?
ATE	OK	n.d.?	Yes (GC-HRMS)
a,b-TBECH	OK	n.d.?	Yes (GC-HRMS)
PBT	OK	n.d.?	Yes (GC-HRMS)
PBEB	OK	n.d.?	Yes (GC-HRMS)
DPTE	OK	n.d.?	Yes (GC-HRMS)
HBB	OK	detect	Yes (GC-HRMS)
DBDPE	OK	n.d.?	Yes (GC-HRMS)

## **Soon to Come...**

- **Develop off-line SPE/LC-MSMS methods for phenolic compounds (e.g. PCB/PBDE OH-metabolites, triclosan, BPA, etc.)**
- **Analyze serum samples from California study populations**